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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/648,483

08/27/2003

Toshiaki Nagai

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05/17/2005

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EXAMINER

ELLIS, SUEZU Y

ART UNIT

PAPER NUMBER

2878

DATE MAILED: 05/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

**Office Action Summary**

Application No.

10/648,483

Applicant(s)

NAGAI, TOSHIAKI

Examiner

Suezu Ellis

Art Unit

2878

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --****Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 August 2003.
- 2a) ☐ This action is **FINAL**.      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 5, 8, 13 and 16-21 is/are rejected.
- 7) ☒ Claim(s) 1-23 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on August 27, 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

The information disclosure statement (IDS) submitted on August 27, 2003 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

### ***Claim Objections***

Claims 1-23 are objected to because of the following informalities:

Claims 1-5, 14 and 16-23 have multiple grammatical errors and need to be reworded.

Some suggestions are presented as:

Claim 1, lines 10-11, replace "separated" with --for separating--.

Claim 1, line 12, insert --a-- between "detect" and "change".

Claim 1, lines 20-21, replace "asymmetry nature about a half-turn" with --an asymmetric nature of about a half-turn--.

Claim 2, line 7, insert --the-- between "of" and "in-plane".

Claim 2, line 9, insert --the-- between "from" and "other" and remove "two".

Claim 3, line 4, insert --a group of-- after "of".

Claim 4, line 4, replace "ununiform" with --a non-uniform--.

Claim 5, line 4, insert --a-- between "controlling" and "phase".

Claim 14, line 3, insert --a-- between "or" and "focusing".

Claim 14, line 3, insert --,-- after mirror and remove "and".

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Claim 14, lines 5-6, replace "and light scattered" with --wherein the light scattered--.

Claim 16, line 12, replace "where detectivity to a perpendicular" to --where detection of a perpendicular--.

Claim 17, line 9, insert --a-- between "registering" and "relationship".

Claim 18, line 6, replace "a symmetry nature" with a --symmetric nature--.

Claim 18, line 6, replace "asymmetry nature about a half-turn" with --an asymmetric nature of about a half-turn--.

Claim 18, line 11, insert --a-- between "about" and "reflection".

Claim 18, lines 20-21, replace "separated" with --for separating--.

Claim 18, line 21, insert --a-- between "detect" and "change".

Claim 18, line 27, insert --the-- between "from" and "light".

Claim 19, line 4, insert --a-- between "source," and "a".

Claim 19, line 9, replace "ununiformly acting" with --acts non-uniformly--.

Claim 20, line 6, insert --a-- between "generates" and "half-wave".

Claim 20, line 7, replace "ununiformly acting" with --acts non-uniformly--.

Claim 21, line 6, insert --the-- between "rotates" and "polarization".

Claim 21, lines 6-7, replace "ununiformly acting" with --acts non-uniformly--.

Claim 22, line 1, insert --separately-- between "for" and "measuring".

Claim 22, line 3, remove "separately".

Claim 22, line 4, insert --the-- before "other" and remove "two".

Claim 22, line 11, replace "separated" with --for separating--.

Claim 23, line 10, replace "separated" with --for separating--.

Claim 23, line 12, insert --a-- between "detect" and "change".

Claim 23, line 18, insert --the-- between "on" and "polarization"

Claim 23, lines 20-21, replace "asymmetry nature about a half-turn" with --an asymmetric nature of about a half-turn--.

Claims not specifically addressed are also objected to due to their dependency on an objected claim.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 5, 8, 13, 16-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 5, line 5, it is unclear as to what the outside is. From the outside of what? Please clarify.

With respect to claims 8 and 13, is the magnetic substance of the probe the same as the magnetic substance described in claim 1, or are they two different magnetic substances? If it is the same, remove the article "a" and replace with --said--.

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Further, in line 5, is the “magnetization vector components” the same as the “in-plane magnetization vector component” described in the preamble of claim 1? If so, please indicate so and make the components singular since claim 1 indicates only one component is measured.

With respect to claim 16-17, lines 3-6, it is unclear how the Faraday cell would be provided after the magnetic substance or in an optical path where the light is reflected by the magnetic substance. If the Faraday cell is in the optical path where light is reflected by the substance, isn't this equivalent to the Faraday cell located after the magnetic substance? Please reword.

Claim 18, lines 26-44 are poorly written. For example, in lines 29-30, claim language recites “and acting on the light flux has action on distribution in the light flux”. Lines 34-44 lack commas, thus making the claim language hard to read. Please rewrite.

Claims not specifically addressed are indefinite due to their dependency on an indefinite claim.

### ***Allowable Subject Matter***

Claims 1-23 would be allowable if rewritten to overcome the objections and/or the rejections under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action

With respect to claim 1, prior art fails to teach or reasonably suggest a measuring device for measuring an in-plane magnetization vector component of a magnetic substance comprising a half-turn asymmetric polarizing element that its action on

polarization distribution in a cross section of incident light flux produces an asymmetry nature of about a half-turn around an optical axis, in addition to the other features of the claim.

With respect to claim 18, prior art fails to teach or reasonably suggest a measuring device comprising a half-turn asymmetric reflective symmetry polarized light source which outputs a light flux whose intensity distribution has a symmetric nature of about a half-turn, while the polarization state distribution has an asymmetric nature of about a half-turn around an optical axis in a cross section of the light flux perpendicular to the optical axis, as well as whose intensity distribution and polarization state distribution in the cross section of the light flux are both symmetric about the reflection with respect to a certain plane including the optical axis as a boundary plane, in addition to the other features of the claim.

With respect to claim 22, prior art fails to teach or reasonably suggest a measuring device for measuring only one component of an in-plane magnetization vector component of a magnetic substance comprising a divisional half-wave element placed in an optical path between the light source and the focusing unit where the light reciprocates and that is constituted half-wave elements which are divided into two regions with a straight line as a boundary in a cross section of the light flux and whose respective neutral axes in the two regions and the boundary makes angles of the same absolute value with opposite signs, in addition to the other features of the claim.

With respect to claim 23, prior art fails to teach or reasonably suggest a measuring device for measuring an in-plane magnetization vector component of a

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magnetic substance comprising a divisional half-wave element in an optical path before the focusing unit where the light reciprocates, whose action on the polarization distribution in a cross section of the light flux has asymmetric nature of about a half-turn around an optical axis, in addition to the other features of the claim.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Fukumoto et al. (US 5,329,381) discloses in Fig. 1, an optical pick up apparatus comprising a light source (1), a focusing unit (8) to focus light from the light source and irradiate it onto a magnetic substance (2 – magneto-optical disc), a polarization split detector (13) that detects a light amount of polarization component in one direction, a polarizing beam splitter (7, 11) and photo-detectors (12, 13) that detect changes in the light amount of the light flux reflected by the magnetic substance (col. 6, lines 38-48), and a half-turn polarizing element (9) that act upon only the light reflected from the magnetic substance (col. 5, line 65 - col. 6, line 2).

***Telephone/Fax Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Suez Ellis whose telephone number is 571-272-2868. The examiner can normally be reached on 8:30am-7pm (Monday-Thursday).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on 571-272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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